

PH 451/551-4A: Introductory Quantum Mechanics II– Spring 2005

Location: Campbell Hall 445

Time: Tuesday & Thursday, 3:30-4:45pm

Instructor: Dr. Perry A. Gerakines

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Office: Campbell Hall 383 / 379

Office Hours: Wed. 2-3pm (or by appt)

Text: Quantum Mechanics: Concepts and Applications, by Nouredine Zettili

Prerequisites: PH 351/2 Modern Physics
PH 461/2 Classical Mechanics
knowledge of calculus, vectors, linear algebra, and differential equations is expected

Course Description/Objectives: Principles of quantum mechanics; application to atoms, particle waves, tunneling, and angular momentum. Methods and formalism of quantum mechanics.

Final Grade: 45% Average of 3 in-class quizzes
25% Final exam
30% Homework

Attendance: Not mandatory, but anything discussed in lecture may appear on the homework assignments or examinations.

Homework: Assignments from the text will be given out as new topics are introduced and will be due at the beginning of class each Tuesday- that means 3:30pm! *Late homework will not be accepted without proof of emergency circumstances.*

Quizzes and Final Exam: Three in-class quizzes will be given (the first in week 5, the second in week 10, and the third in week 15), and each quiz will cover all material since the previous quiz. The exact dates of and materials contained in the quizzes will depend on the pace of the course and will be announced two weeks in advance. The final exam will be comprehensive and given at the time scheduled by UAB (Thursday, April 28, 4:15 p.m.-6:45 p.m.). Examination questions will be similar to the homework questions. The examinations will be closed book and closed notes, but you may use your calculator and one 8.5" × 11" sheet of notes and formulas you have prepared in advance. No make-up quizzes will be given, but genuine verifiable emergencies may be accommodated if I am notified within 24 hours.

All problem solutions (homework and exams) must be written clearly with sufficient explanations so that your solution is clear. All calculations must be clearly shown.

Graduate students enrolled in PH551 are assumed to have had more exposure to introductory physics concepts and are expected to utilize this in answering homework and exam questions. This expectation is reflected in the assignment of partial credit on exams and homework. When comparing scores on exams and homework with undergraduates enrolled in PH451, keep that difference in mind. Graduate students enrolled in PH551 will also be assigned 1 or 2 extra homework problems per assignment and 1-2 extra exam questions that will be optional and counted as extra credit for the undergraduate students enrolled in PH451.